

SECTION 03 3053
MISCELLANEOUS CAST-IN-PLACE CONCRETE

LANL MASTER SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Civil POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 / ML-4 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

PART 1 GENERAL

NOTE: This specification may be adjusted to cover separate curbs and gutters or combination curbs and gutters. This guide specification will not be used for integral or monolithic curbs of concrete pavement.

1.1 SECTION INCLUDES

- A. Concrete sidewalks, drive pads, and median pavement.
- B. Concrete curb and gutters.
- C. Concrete for fence posts
- D. Concrete thrust blocks on utility lines

1.2 SUBMITTALS

- A. Submit the following in accordance with Section 01 3300, Submittal Procedures:
 - 1. Material certifications documenting compliance with the New Mexico Department of Transportation (NMDOT) Standard Specifications for Highway and Bridge Construction (SSHBC) and the NMDOT Supplemental Specification to the 2000 Edition of the Standard Specifications for Highway and Bridge Construction (Supplemental SSHBC). Guidance; NMDOT SSHBC book and Supplemental Specifications to the 2000 Edition are at <http://nmshtd.state.nm.us/main.asp?secid=11183>
 - 2. Design mix of each class of concrete.
 - 3. Laboratory test reports for design mix for concrete.

4. Test Reports of Concrete Field Testing.

5. Batch tickets.

1.3 RELATED SECTIONS

A. Section 31 2000 - Earth Moving

B. Section 03 3001 - Reinforced Concrete

1.4 QUALITY ASSURANCE

A. Perform work, materials and construction requirements, in accordance with the NMDOT SSHBC, Section 608, Sidewalks, Drive Pads, and Concrete Median Pavement and NMDOT SSHBC Section 609, Curb and Gutter.

B. Furnish and place concrete in conformance to the NMDOT Supplemental SSHBC Section 510.

1.5 JOB CONDITIONS

A. Do not place concrete when base surface temperature is less than 40 degrees F.

B. Perform concrete washout, trucks and mixers, in a designated and controlled area to prevent the runoff of washout material and the co-mingling of unset concrete with storm water. Properly dispose of all hardened concrete.

PART 2 PRODUCTS

2.1 MATERIALS

A. Provide materials and construction requirements for forms, concrete, joints, and required accessories conforming to NMDOT SSHBC Section 608, Sidewalks, Drive Pads, and Concrete Median Pavement and NMDOT SSHBC Section 609, Curb and Gutter.

2.2 ACCESSORIES

A. Joint Fillers shall be preformed and conform to the requirements of AASHTO M 33 or M153.

PART 3 EXECUTION

3.1 INSPECTION

A. Verify compacted, treated base is ready to support concrete and imposed loads.

B. Verify grades and elevations of base are correct.

C. Verify forms are set to the required grade and alignment and extend to the required depth.

3.2 PLACING CONCRETE

- A. Notify the LANL Construction Inspector a minimum of 24 hours prior to commencement of concreting operations.
- B. Ensure that reinforcement, inserts, embedded parts, fence posts, formed joint fillers, joint devices, and formwork are not disturbed during concrete placement.
- C. Concrete shall be placed in the forms in one layer. The concrete shall be consolidated with an approved vibrator, and the surface shall be finished to grade with a strike off.
- D. Install joint fillers, primer and sealant in accordance with manufacturer's instructions.
- E. Install joint devices in accordance with manufacturer's instructions.
- F. Place concrete continuously between predetermined expansion, control, and construction joints.
- G. Concrete Finishing
 - 1. The surface shall be finished true to grade and section with a wood float or darby to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. Sidewalks shall receive a scored surface produced by brooming with a fiber-bristle brush in a direction transverse to that of the traffic, followed by edging.
 - 2. All slab edges, including those at formed joints, shall be finished with an edger having a radius of 1/4 inch.
 - 3. Finished surfaces shall not vary more than 1/4 inch from the testing edge of a 10-foot straightedge.
 - 4. Slope top of concrete fence post bases to provide positive drainage.
 - 5. Finish thrust blocks to the extent where surface voids are eliminated.

3.3 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury.
- B. Use all applicable practice and recommendations: for hot weather concrete application, from ACI 305R; for cold weather concrete applications from ACI 306R; for curing from ACI 308.

3.4 FIELD QUALITY CONTROL

- A. Provide a certified testing agency to perform field testing in accordance with ACI 301. Testing laboratory certification may be provided by Cement and Concrete Reference Lab (CCRL).

1. Testing agencies for performing testing services on concrete materials shall meet the requirements of ASTM C 1077.
 2. Field testing of concrete shall be performed by an ACI Certified Concrete Field Testing Technician – Grade I.
- B. Notify the LANL Construction Inspector 48 hours in advance of field testing to allow for witnessing of testing.
- C. The Testing Agency shall perform the following tests and collect strength cylinders on one batch in every 50 cu. yds. of concrete placed or once a day when less than 50 cu. yds. is placed.
1. Record temperature of concrete in accordance with ASTM C 1064.
 2. Perform slump test in accordance with ASTM C 143.
 3. Perform air content test in accordance with ASTM C 231, pressure method.
 4. Take 4 concrete strength test cylinders in accordance with ASTM C 31.
- D. The Testing Agency shall test the strength test cylinders in accordance with ASTM C 39 at 7 days and 28 days.

3.5 DEFECTIVE CONCRETE

- A. Defective concrete is concrete not conforming to strength requirements, not being free from excessive cracking, discoloration, form marks, tool marks, honeycombs, embedded debris, or otherwise non-consistent with the overall appearances of the work.
- B. Do not accept or place defective concrete that is not in conformance with acceptance criteria. Return the fresh concrete to the supplier.
- C. Replace defective concrete not meeting appearance criteria, at Contractor's expense. The Contract Administrator may allow repair of defective concrete at Contractor's expense.
- D. Replace concrete not in conformance with details, tolerances, and other construction requirements at Contractor's expense.

END OF SECTION

Do not delete the following reference information:

FOR LANL USE ONLY

This project specification is based on LANL Master Specification 03 3053 Rev. 1, dated September 14, 2006.